



UNITED STATES PATENT AND TRADEMARK OFFICE

UNITED STATES DEPARTMENT OF COMMERCE
United States Patent and Trademark Office
Address: COMMISSIONER FOR PATENTS
P.O. Box 1450
Alexandria, Virginia 22313-1450
www.uspto.gov

APPLICATION NO.	FILING DATE	FIRST NAMED INVENTOR	ATTORNEY DOCKET NO.	CONFIRMATION NO.
-----------------	-------------	----------------------	---------------------	------------------

10/849,263

05/20/2004

Koichi Kimura

Q81713

7429

23373

7590

03/24/2005

SUGHRUE MION, PLLC
2100 PENNSYLVANIA AVENUE, N.W.
SUITE 800
WASHINGTON, DC 20037

EXAMINER

TRA, TUYEN Q

ART UNIT

PAPER NUMBER

2873

DATE MAILED: 03/24/2005

Please find below and/or attached an Office communication concerning this application or proceeding.

Office Action Summary

Application No.

10/849,263

Applicant(s)

KIMURA, KOICHI

Examiner

Tuyen Q. Tra

Art Unit

2873

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If the period for reply specified above is less than thirty (30) days, a reply within the statutory minimum of thirty (30) days will be considered timely.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

Status

- 1) ☒ Responsive to communication(s) filed on 29 July 2004.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

Disposition of Claims

- 4) ☒ Claim(s) 1-8 is/are pending in the application.
- 4a) Of the above claim(s) _____ is/are withdrawn from consideration.
- 5) ☐ Claim(s) _____ is/are allowed.
- 6) ☒ Claim(s) 1-8 is/are rejected.
- 7) ☐ Claim(s) _____ is/are objected to.
- 8) ☐ Claim(s) _____ are subject to restriction and/or election requirement.

Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☒ The drawing(s) filed on 29 July 2004 is/are: a) ☒ accepted or b) ☐ objected to by the Examiner.
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

Priority under 35 U.S.C. § 119

- 12) ☒ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☒ All b) ☐ Some * c) ☐ None of:
1. ☒ Certified copies of the priority documents have been received.
 2. ☐ Certified copies of the priority documents have been received in Application No. _____.
 3. ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).
- * See the attached detailed Office action for a list of the certified copies not received.

Attachment(s)

- 1) ☒ Notice of References Cited (PTO-892)
- 2) ☐ Notice of Draftsperson's Patent Drawing Review (PTO-948)
- 3) ☒ Information Disclosure Statement(s) (PTO-1449 or PTO/SB/08)
Paper No(s)/Mail Date 0504.
- 4) ☐ Interview Summary (PTO-413)
Paper No(s)/Mail Date: _____.
- 5) ☐ Notice of Informal Patent Application (PTO-152)
- 6) ☐ Other: _____.

DETAILED ACTION

Oath/Declaration

1. The declaration filed 05/20/2004 is accepted.

Drawings

2. The drawings filed on 07/29/2004 in this application are accepted.

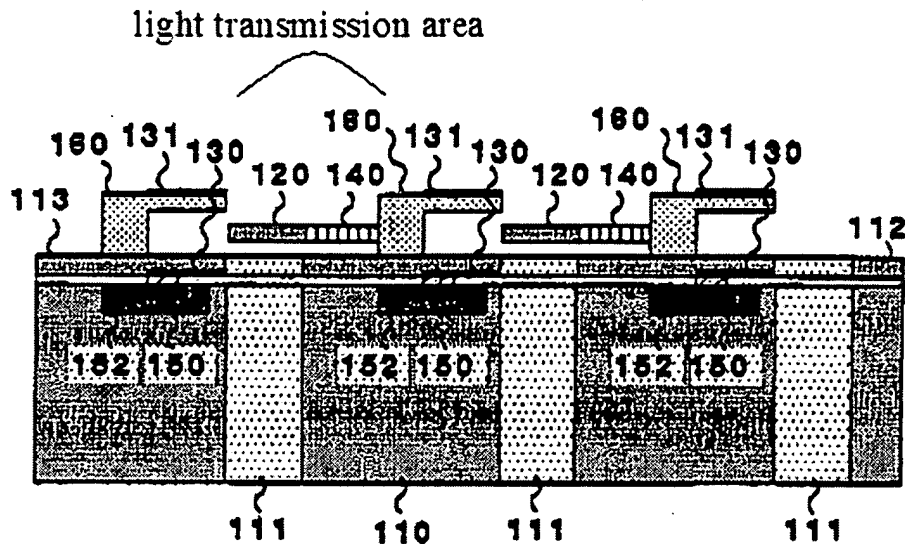
Claim Rejections - 35 USC § 102

3. The following is a quotation of the appropriate paragraphs of 35 U.S.C. 102 that form the basis for the rejections under this section made in this Office action:

(b) the invention was patented or described in a printed publication in this or a foreign country or in public use or on sale in this country, more than one year prior to the date of application for patent in the United States.

4. Claims 1, 3, 5 and 7 are rejected under 35 U.S.C. 102(b) as being anticipated by Koehler et al. (U.S. Pat. 5,062,689 A).

a) Within respect to claim 1, Koehler et al. discloses an electrostatically actuatable light modulating device in Figure 4 comprising of a light transmission area (see below Figure) a transparent substrate (item 110); a pixel drive circuit provided on the transparent substrate (items 150, 152) to form an area other area than the light-transmission area, a transmissive light modulation section including a micro-electromechanical element (item 12), the transmissive light modulation section being controlled by the pixel drive circuit (150, 152) and being provided above the pixel drive circuit (col.2,line 3 - col.3,line 8).



b) Within respect to claims 3, 5 and 7, Koehler et al. discloses an electrostatically actuatable light modulating device in Figure 4 and further with method comprising of a first silicon layer (item 110), an insulation layer (item 130) and a second silicon layer (item 112) in this order, the method comprising: forming a pixel drive circuit (item 150, 152) on the insulation layer (130), the pixel drive circuit including at least part of the second silicon layer (112); eliminating the first silicon layer while a portion other than the first silicon layer is supported; attaching a transparent substrate to the location from which the first silicon layer was removed; and forming a transparent light modulation section including a micro-electromechanical element above the pixel drive circuit (col.2,line 3 - col.3,line 8).

Claim Rejections - 35 USC § 103

5. The following is a quotation of 35 U.S.C. 103(a) which forms the basis for all obviousness rejections set forth in this Office action:

(a) A patent may not be obtained though the invention is not identically disclosed or described as set forth in section 102 of this title, if the differences between the subject matter sought to be patented and

Art Unit: 2873

the prior art are such that the subject matter as a whole would have been obvious at the time the invention was made to a person having ordinary skill in the art to which the subject matter pertains. Patentability shall not be negated by the manner in which the invention was made.

6. Claims 2, 4, 6 and 8 are rejected under 35 U.S.C. 103(a) as being unpatentable over Koehler et al. (U.S. Pat. 5,062,689 A), as applied to claim 1 above.

Koehler et al. discloses an electrostatically actuatable light modulating device in Figure 4 comprising of a light transmission area (see below Figure) a transparent substrate (item 110); a pixel drive circuit provided on the transparent substrate (items 150, 152) to form an area other area than the light-transmission area, a transmissive light modulation section including a micro-electromechanical element (item 12), the transmissive light modulation section being controlled by the pixel drive circuit (150, 152) and being provided above the pixel drive circuit (col.2,line 3 - col.3,line 8).

Koehler et al. does not teach a microlens array provided at an entrance side. Within the same field of endeavor, Johnson disclose a Multi-stage microlens array with teaching of microlens at the entrane side of the transmissive area (Fig. 5A)

It would have been obvious, therefore, at the time the invention was made to a person having skill in the art to construct the electrostatically actuatable light modulating device with the transmissive area such as disclosed by Koehler et al., and with microlens array at the entrance of transmissive area such as discloses by Johnson, for purpose of focusing light to light-transmission area.

Conclusion

7. The prior art made of record and not relied upon is considered pertinent to applicant's disclosure.

Art Unit: 2873

- a) Stern (U.S. Patent 5,771,321 A) discloses a micromechanical optical switch and flat panel display with teaching of pixel circuits (44) provided on a transparent substrate (38), an insulator (40), a transmissive light modulation section including micro-electromechanical element (28).
- b) Yi et al. (U.S. 5,745,281A) discloses an electrostatically-driven light modulator and display.

Any inquiry concerning this communication or earlier communications from the examiner should be directed to Tuyen Tra whose telephone number is (571) 272-2343. The examiner can normally be reached on Monday to Thursday from 8:30am to 6:00pm.

If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Georgia Epps, can be reached on (571) 272 - 2328. The fax number for this Group is (703) 872-9306.

tt

March 16, 2005


Hung Xuan Dang
Primary Examiner